

# Clemson IMPACTS

Clemson University Public Service Activities

Winter 2006



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aquaculture  
industry



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new barn come  
to Garrison  
Arena



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“functional  
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Urban  
children  
learn about  
agriculture



## Letter from the Vice President

Small potatoes have the potential to deliver big profits for farmers who can fill the demand by upscale restaurants and specialty markets. Scientists at Clemson's Coastal Research and Education Center in Charleston are helping South Carolina farmers tap into this promising new market.

Social and economic challenges can be especially great in rural counties, where local resources may be limited. Clemson's Institute on Family and Neighborhood Life has helped Chesterfield County leaders obtain four major federal grants to address social concerns such as preventing violence and substance abuse.

A new mobile command center will help Clemson Regulatory Services and Livestock-Poultry Health scientists respond to agricultural emergencies even in remote areas of the state. Equipped with satellite telephones and a self-contained laboratory, the unit can be set up in the field to diagnose diseases or toxic substances that could threaten crops and livestock.

The use of foods to promote health is as old as Hippocrates; but now research is identifying the specific chemical compounds, or micronutrients, that benefit human health. Clemson animal scientists are using this research to improve the nutritional content in beef and dairy products by modifying what the cattle eat.

At-risk youth are learning to live a deliberate life, relying on nature and each other in an eco-village that Clemson's Youth Learning Institute has established at the W.W. Long 4-H Leadership Center in Aiken. The community environment helps students gain new respect for themselves and others.

You'll find more on these and other Clemson Public Service programs in this issue.

Sincerely,

John W. Kelly  
Vice President for Public Service and Agriculture

*Knowledge for living. Knowledge for life.*

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PUBLIC SERVICE

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**Vice President**  
John W. Kelly

**Editor**  
Debbie Dalhouse

**Designer**  
Rachel Mumford

**Writers**  
Stephanie Beard  
Pam Bryant  
Kerry Coffey  
Peter Kent  
Tom Lollis  
Tracy Outlaw  
Diane Palmer

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Comments, questions and subscription requests:  
Editor *Clemson Impacts*, 130 Lehotsky Hall,  
Clemson, SC 29634-0101, [ddalhou@clemson.edu](mailto:ddalhou@clemson.edu),  
(864) 656-6737.

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## Small potatoes bring gourmet prices

By Tom Lollis

Small potatoes may yield big profits for farmers along South Carolina's coast. The specialty potatoes have become gourmet fare, commanding prices four to 10 times higher than regular potatoes.

High-end restaurants and specialty markets now have to buy the gourmet potatoes from producers in northern and western states. But local growers from Florence to Beaufort could fill this niche beginning in 2007, thanks to Clemson Extension vegetable specialist Richard Hassell.

For the past three years, he has been developing best growing practices for potatoes under two inches in diameter at Clemson's Coastal Research and Education Center in Charleston. Last spring, he offered tiny potatoes in a variety of colors to chefs at upscale restaurants in Charleston, Myrtle Beach and Hilton Head.

Colors included yellow with a red stripe inside, red skin with dark yellow flesh, and white skin with red flesh. This year, he plans to grow purple, yellow and blue varieties. The tiny potatoes were a hit with the specialty restaurants and would be a natural fit for tomato and melon growers along the coast.

"You need cool temperatures to set the dark skins," said Hassell. "We're doing just the opposite of what potato growers in the northern part of the country do. We plant when it's real cold and harvest when it's real hot."

For more information: Richard Hassell, 843-402-5394, [rhassell@clemson.edu](mailto:rhassell@clemson.edu).



Photo by Tom Lollis

## Avian flu plans in place

By Peter Kent

Poultry industry and Clemson animal health personnel are taking precautions to keep avian flu out of the state, said Tony Caver, director of Clemson's Livestock-Poultry Health programs, the regulatory agency that enforces state and federal animal health laws.

"Avian influenza was a concern for the poultry industry long before the Asian strain appeared," said Caver. "We have containment plans in place should an outbreak occur. These include routine monitoring, quarantines, surveillance zones, depopulation, disposal, cleaning, disinfecting and finally repopulating the farms."

Several firewalls exist to protect U.S. flocks from "type Z" of H5N1, the Asian form of the disease. Biosecurity practices call for keeping poultry in sheltered housing where they have no contact with wild birds or other livestock and only limited contact with humans.

In addition, the U.S. has never imported poultry products from Southeast Asia, and since the Asian flu crisis was identified, importation of live birds or other potential carriers of the disease is prohibited.

For more information: [www.clemson.edu/LPH/](http://www.clemson.edu/LPH/) > News and Updates.



## Survey tracks aquaculture industry

By Stephanie Beard

All South Carolina fish farmers and aquaculture professionals should have received census forms from the National Agricultural Statistics Service in December. These forms collect information about the industry, including water area, production and sales, point-of-sale outlets, farm labor, and species distributed for restoration or conservation.

"It is very important that all farmers, no matter the size of their operation, report their production," said Jack Whetstone, Clemson Extension aquaculture specialist who works with the S.C. Sea Grant Extension Program and S.C. Department of Natural Resources. "It could have a dramatic effect on our farms and the future of the state's aquaculture industry."

Information from the census helps improve aquaculture policies and programs, aids business marketing strategies, and allows research institutes to develop new and improved methods of production. Census results will be posted at [www.nass.usda.gov/](http://www.nass.usda.gov/) in fall 2006.

For more information: Jack Whetstone, 843-546-6321, [jwhstn@clemson.edu](mailto:jwhstn@clemson.edu).



# Alpacas and new barn come to Garrison Arena

By Debbie Dalhouse

A new appreciation for the cashmere-like fiber is driving growth in the number of alpaca breeders in the Southeast. Clemson's T. Ed Garrison Livestock Arena held the first annual Palmetto Alpaca Classic in November, attracting more than 50 breeders and 200 alpacas from four states.

The two-day event was sponsored by the Southeastern Alpaca Association and the Alpaca Small Farm Network, and included a show and sales of garments and crafts made from the luxurious fiber.

The Garrison Arena is one of the premier livestock complexes in the Southeast. It hosts more than 60 events each year, including horse shows for all major breeds, horsemanship clinics, dairy goat and cattle shows, and purebred cattle sales.

The arena opened in 1991 and, with generous support from the S.C. General Assembly, the livestock industry and private donors, now offers an indoor arena with seating for 3,000; a covered outdoor arena, a cattle arena and milking parlor, and three barns with 328 permanent stalls. A fourth barn, with an additional 112 stalls, is scheduled to open in January, in time for the busy show season.

"Expanding the capacity to 440 stalls is needed to accommodate the growing number of exhibitors and shows," said arena director Charles Williams.

For arena information: Charles Williams, 864-646-2717, [cwllms@clemson.edu](mailto:cwllms@clemson.edu) or [www.clemson.edu/garrison/](http://www.clemson.edu/garrison/). For alpacas: [www.asmallfarmnetwork.org/](http://www.asmallfarmnetwork.org/).



Photo by Tom Lollis

## Modified tobacco equipment combats bacterial wilt

By Tom Lollis

Because of a conversation about harvesting bananas, Clemson scientists are developing new equipment to protect the state's tobacco crop from bacterial wilt. The disease can knock out as much as eight percent of the state's \$100 million crop in a year.

Plant pathologist Bruce Fortnum suspected that growers were spreading the disease with their topping and harvesting equipment. At an international conference, an African scientist said that the same disease attacks bananas. To prevent it from spreading, harvester's knives are sterilized before cutting each bunch.

Fortnum tested his hypothesis at Clemson's Pee Dee Research and Education Center in Florence. Tests confirmed that mechanical toppers did spread wilt, while hand-topping did not. "This state was pretty much free of bacterial wilt until the late 1970s because most of the farms were small and the work was done by hand," said Fortnum. "That's not feasible with today's larger farms."

A team of Clemson scientists worked with equipment patent holders in North Carolina to develop a new system that sterilizes the blades used to remove the tobacco flower. The new design will be available for a limited number of growers in 2006. Now the team is working to make similar modifications available for harvesting equipment.

For more information: Bruce Fortnum, 843-662-3526, [bfrtnm@clemson.edu](mailto:bfrtnm@clemson.edu).

## Marketing seminar helps farmers plan for 2006

By Peter Kent

Their boardrooms may be barns, but farmers need marketing plans as much as any business executive. For seven years Clemson's Extension Service has offered a marketing seminar to help farmers turn their commodities into cash.

This year's seminar, held January 10-13, provided farm operators with an intense education. Topics included market analysis, selling and pricing strategies, government programs, crop insurance and commodity trends. After more than 16 hours of hands-on training, participants left with a marketing plan based on their own farm costs and needed returns, not hopes and hot-tips.

Clemson Extension farm business consultant Scott Mickey led the teaching team that included Jeff Beal of Jerry Gulke's Strategic Marketing Services and Edgar Woods and Brenton Bozard of Palmetto Grain Brokerage.

Agriculture and forestry (the food, fiber and forestry industries) are among the most important components of South Carolina's economy. One in five jobs and 17% of the state's economic output are linked to these industries. The sector provides 460,000 full and part-time jobs (22% of the state total), \$15.1 billion in income (17% of the state total), and creates \$35.7 billion in gross sales (22% of state total).

For more information: Scott Mickey, 803-775-4580, [smickey@clemson.edu](mailto:smickey@clemson.edu).

## Chesterfield programs address county needs

By Kerry Coffey

Collaboration between Chesterfield County Coordinating Council and Clemson's Institute on Family and Neighborhood Life has brought the county major federal funding to address social service needs. To date, the county has been awarded four competitive grants, totaling \$846,971.

"It is very encouraging and refreshing to know that we have an organization like IFNL at Clemson that has the personnel and ability to help rural communities develop these programs," said Ted Vick, Representative from House District 53 and Chesterfield County Coordinating Council Chairperson. "We appreciate Clemson's help to make Chesterfield County a model for the nation."

One initiative seeks to improve the criminal justice system. Chesterfield was chosen as one of 10 demonstration sites in the nation to prevent and reduce crime, improve coordination among justice agencies, enhance services to victims, and increase trust in the justice system. Funding is provided to the Solicitor's office by the U.S. Bureau of Justice.

A second initiative funds an effort by the Chesterfield County Coordinating Council to establish a Drug-Free Chesterfield Coalition, comprised of community leaders, to reduce substance abuse by youth and adults. This grant is from the U.S. Department of Health and Human Services.

Other initiatives include the Stop the Violence project to prevent family and intimate partner violence and the SAMHSA project to prevent substance abuse.

For more information: Clemson Institute on Family and Neighborhood Life, 864-656-6271, [www.clemson.edu/ifnl](http://www.clemson.edu/ifnl).



## Community effort builds new Barnwell library

By Tom Lollis

Capital campaign training organized by a Clemson Extension agent was vital to bringing a new library to downtown Barnwell.

"We had needed a new library since 1989," said Terri Smith, Barnwell County Extension community development agent and chair of the Barnwell County Library Board. The old home that had served as the Barnwell Library since 1953 was cramped and deteriorating. "The State Library said that Barnwell needed 10,400 square feet of floor space, but we didn't have the money."

In 2000 Smith assembled a group of volunteers and organized capital campaign training. In 2002, the Barnwell County Library Board acquired a vacant downtown store and set a goal of \$3.5 million to renovate it and to improve the libraries in Blackville and Williston.

The campaign raised \$3.2 million, with \$300,000 still being sought. Construction began in the spring of 2004 and a grand opening was held in October 2005.

"The new 17,000 square-foot facility gives the library enough space for the next 20 years and room to expand in the future," Smith said. "It revitalizes Barnwell and brings people downtown, which is a big boost for merchants."

For more information: Terri Smith, 803-259-7141, [tsmith@clemson.edu](mailto:tsmith@clemson.edu).





## Invasive species don't belong in U.S. gardens

By Tom Lollis

Some plants just don't belong in South Carolina lawns and gardens. Many species from Asia have become environmental nightmares in the United States, according to Vaughan Spearman, Clemson Extension forestry and wildlife agent in Jasper County.

"Kudzu is the perfect example of an invasive species," Spearman said. "It was brought into this country by the federal government to control erosion and it just got out of hand." Another invasive species is Dutch elm disease. A 1926 furniture shipment brought in the bark beetle that spread the disease and killed the American elm tree.

"Problem plants are still arriving," Spearman said. Garden plants from Asia or South America pose a significant threat to gardens and natural areas. "They will eliminate all competing vegetation in a very short time."

Other invasive plants include timber bamboo, privet, wisteria, nandina, honeysuckle, parasol tree and tallow tree. Except for the parasol tree, each of these plants is listed on the federal noxious weed list, as well as the state invasive species list.

"Try to find native or sterile substitutes for these plants, and encourage your favorite nursery to do the same," Spearman said.

For more information: Vaughan Spearman, 843-726-3461, [espearm@clemson.edu](mailto:espearm@clemson.edu) or [www.invasive.org/](http://www.invasive.org/).



Photo by Tom Lollis

State Rep. Chip Limehouse and fire ant specialist Tim Davis release predatory flies to control fire ants at Boone Hall Plantation near Charleston.

## Predatory flies attack fire ants

By Tom Lollis

A cooperative effort with USDA-Agricultural Research Service is releasing predatory flies to reduce fire ant populations in the Southeast. The flies lay eggs in the ants' heads, causing the heads to fall off as the larvae grow. Only the imported fire ants are targeted; no other species are affected.

The latest release of predatory flies was in October at Boone Hall Plantation near Charleston. Since 1998, two species of predatory flies have been successfully released on the Clemson campus and six other sites across South Carolina. Two more species are in the pipeline for delivery from the USDA laboratory in Gainesville, Florida.

"Our plan is to let the flies spread naturally from strategic locations around the state," said Tim Davis, Clemson Extension fire ant specialist. He is encouraged by signs that the flies are spreading. They have been found seven miles from a release point in Fairfield County in just two years. The earliest release sites in Florida have spread as much as 30 miles per year.

"I'm very impressed," said Chip Limehouse, Representative for S.C. House District 110. "If this works, it could be one of the silver bullets we've been looking for to deal with the terrible fire ant problem in South Carolina."

Biology alone won't be enough to control fire ants, Davis said. A combination of fire ant baits and other chemicals, plus biological controls, will be needed to reduce populations to more manageable levels.

For more information: <http://entweb.clemson.edu/fireant/> or Tim Davis, 803-635-4722, [tdvs@clemson.edu](mailto:tdvs@clemson.edu).



# Task force targets invasive marsh reed

By Stephanie Beard

An aggressive marsh weed is invading South Carolina's coastal wetlands. Phragmites, or common reed, occurs naturally throughout the United States. However, the native species cannot compete with an introduced type, *Phragmites australis*, which first appeared in Winyah Bay near Georgetown in the 1970's.

The non-native species changes the marsh ecosystems, decreasing native biodiversity and reducing wildlife habitat. It has invaded several thousand acres of tidal marshes and wetland impoundments needed by migratory waterfowl and wading birds.

Jack Whetstone, Clemson Extension aquatic specialist at the Baruch Institute of Coastal Ecology and Forest Science, is working with the Winyah Bay Focus Area Task Force to develop controls for the invasive plant. He and Matt Nespeca of The Nature Conservancy co-chair the Nuisance Species Committee.

The committee includes representatives from Clemson, The Nature Conservancy, the University of South Carolina, S.C. Department of Natural Resources (SC-DNR), Ducks Unlimited, private industry, and landowners. They are determining the extent of the infestation and testing various EPA-approved herbicides in conjunction with water control structures that affect salinity to kill the noxious reed.

The group hopes to increase public awareness of this threat to the state's marshes. They also have developed a cost-share program to help landowners control phragmites in the Winyah Bay area, funded by SC-DNR, the U.S. Department of Agriculture, and the U.S. Fish and Wildlife Foundation.

For more information: Jack Whetstone, 843-546-6321, [jwhtstn@clemson.edu](mailto:jwhtstn@clemson.edu).



Photo by Tom Lollis

## Mobile command center aids rapid response team

By Tracy Outlaw

South Carolina is one of the first states in the nation to develop a field-level rapid response team for chemical and biological threats to agriculture. The team is equipped with a mobile command center so they can respond from any location in the state.

Clemson Regulatory Services experts in plant disease and pesticide misuse investigation make up the team. They provide the agricultural community with an early warning system to identify, contain, and mitigate chemical and biological threats.

Team members undergo specialized training to respond to threats that target the state's agricultural resources. Their mobile command center includes a field communications center and laboratory. The laboratory is equipped to diagnose plant diseases and identify pesticides or similar toxic substances that could threaten crops and livestock.

The communications center is equipped with statewide radio, cell phone and satellite phone technology. This provides Clemson regulatory agents with direct contact to support state and local emergency response units, law enforcement, and other agencies such as Clemson Livestock-Poultry Health or county agricultural response teams.

For more information: Christel Harden, 864-646-2135, [charden@clemson.edu](mailto:charden@clemson.edu).



Photos by Debbie Dalhousie



Photo by Debbie Delhouse

Tom Jenkins studies cattle nutrition.

### Food processors learn how to protect canned foods

By Diane Palmer

To ensure the safety of pickled and canned foods, companies must follow guidelines from the U.S. Food and Drug Administration (FDA) and the U.S. Department of Agriculture (USDA). They also must have a certified supervisor on the premises when processing these foods.

Clemson food scientist Felix Barron leads the Better Process School that provides the training supervisors need to become certified. School participants learn the principles and microbiology of thermally processed foods, food container handling, record-keeping, instrumentation and sanitation for food safety. Additional training and certification exams are offered for specific processing systems.

Examination questions are prepared by the Food Processors Institute with the approval of the FDA and USDA. The school is offered once a year on the Clemson campus; it can also be conducted at the company by request. After participants successfully complete the course, their names are submitted to the federal agencies and verification is sent to their employer.

For more information: Felix Barron, 864-656-5694, [fbarron@clemson.edu](mailto:fbarron@clemson.edu).

## Beef and dairy products identified as “functional foods”

By Peter Kent

The advice “Let food be thy medicine and medicine be thy food,” urged by medical sage Hippocrates nearly 2,500 years ago is finding new advocates today. Public interest has soared in the health-enhancing role of specific foods, called functional foods, and Clemson researchers are at the forefront of the field.

After years of battling to keep its place on dinner plates, beef turns out to be a significant source of biochemical compounds that fight cancer and control weight. Clemson animal scientist Tom Jenkins is seeking to stimulate production of these beneficial bio-compounds in beef and dairy cattle.

The anti-carcinogenic fatty acid called conjugated linoleic acid, or CLA, was first isolated from grilled beef in 1987. The highest concentrations are found in fat from beef, dairy and lamb. Remarkably, the beneficial acid increases as foods are cooked or processed.

In addition, some of the fats in milk and dairy products have been shown to help suppress stomach tumors in mice and mammary cancer in rats. More recently, CLA has been investigated for its ability to alter body composition, posing a tantalizing possibility for weight-loss. Mice fed CLA-supplemented diets had 60% less body fat and a 14% increase in lean body mass compared to the control group.

Jenkins and fellow animal scientists are seeking to increase the beneficial fat content in milk by modifying dairy cows’ diets.

For more information: Tom Jenkins, 864-656-2707, [tjnkn@clemson.edu](mailto:tjnkn@clemson.edu).

## Nutrition program helps families make informed choices

By Diane Palmer

Limited resource families learn information, skills, attitudes and behavior needed to improve their diet through Clemson Extension’s Expanded Food and Nutrition Education Program (EFNEP).

“Families learn to make informed choices about low-cost, nutritious foods; to better manage family finances; and to become more self-sufficient,” said Katherine Cason, Clemson nutritionist and coordinator of the USDA-funded program.

Now EFNEP is including education about physical activity, since obesity in overweight adults has grown progressively since 1990, including more than 60% of the state’s adult population. Childhood obesity shows a similar increase.

The program is also expanding to serve Hispanic families and youth. A team of research and outreach associates, graduate students and staff is already in place with plans to hire three Hispanic lay educators for this increasing population. The state’s Hispanic population has increased 211%, from 30,500 residents in 1990 to 95,076 residents in 2000, and suffers from overweight and obesity at higher than average rates.

“This reality is extracting a heavy toll of physical, emotional and financial costs for Hispanic families,” said Cason. “It also drains state resources through higher medical expenses and lost productivity. Many obesity-related diseases, such as diabetes, hypertension, heart disease and some cancers, are preventable through healthy lifestyles that include proper nutrition and physical activity.”

In 2004, 93% of EFNEP participants showed improvement in one or more nutrition practices; 93% showed improvement in one or more food resource management practices; and 75% showed improvement in one or more food safety practices.

For more information: Katherine Cason, 864-656-0539, [kcason@clemson.edu](mailto:kcason@clemson.edu) or [www.clemson.edu/efnep/](http://www.clemson.edu/efnep/).



Photo by Abel Caballero



## Eco-village gives at-risk youth new perspectives

By Pam Bryant

Clemson's Youth Learning Institute has partnered with the South Carolina Department of Juvenile Justice to establish a village where students learn to live a deliberate life, relying only on the essentials: food, water, a campfire and each other.

The Village at Crooked Branch is located at the Youth Development Center, part of Clemson's W.W. Long 4-H Leadership Center in Aiken. It's the first of its kind in South Carolina.

The Youth Development Center is an alternative placement facility for non-violent juvenile offenders who take turns living at the eco-village. There, they learn how to plan and prepare meals over a campfire, purify water, and build temporary shelters. Daily chores are shared among group members, and a key goal is to limit impact on the natural environment.

Jen Collier, assistant direct of program support, says students consistently demonstrate a shift from focus on self to concern for the needs of the community.

"Students take on different roles and responsibilities to manage the community and survive. The eco-village is an environment where trial and error leads to the practical application of acquired skills," said Collier. "The result is a community environment where group camaraderie and selflessness is at the heart of the village, and students gain new respect for themselves and others."

For more information: Jen Collier, 864-878-1103, [collie4@clemson.edu](mailto:collie4@clemson.edu).



Photo by Jen Collier



Photo by Tom Lollis

Third graders from South Aiken Baptist Christian School take readings on soil temperature and depth of topsoil and subsoil during a Soil Science Week visit to Edisto Research and Education Center.

## Urban children learn about agriculture

By Tom Lollis

South Carolina children get a three-month break from school each summer, but most don't know they owe their free time to days when students were needed to work on the farm.

"Most students today are urban so they don't have to work on the farm or know much about farms and agriculture," said Don Manley, Clemson Extension entomologist at the Pee Dee Research and Education Center (REC) in Florence.

He and other Clemson faculty, staff and volunteers are trying to correct that. Each fall elementary school students tour the Pee Dee REC and Edisto REC at Blackville to learn about crops such as corn, soybeans, peanuts and cotton and how they are used in products found at the local supermarket.

Claudia Meadows, volunteer leader for the Learning Center facility of the Agricultural Heritage Center at Edisto REC, led a Soil Science Week to teach children the importance of this natural resource. A soil profile pit showed how soil is like a layer cake with a thin organic icing on top and thicker layers of topsoil, subsoil and clay below.

Students attending the S.C. State Fair in Columbia heard John Oxner, Clemson Extension agent in Lexington County, explain how food gets from the farm to the processor, from the processor to the distributor, from the distributor to the retailer and from the retailer to the table.

"We're trying to help young people recognize that farming is very important," said Manley. "As long as all of us want to eat, we need farmers."



## 4-H<sub>2</sub>O program wins national award

By Diane Palmer

Clemson's 4-H<sub>2</sub>O program has won a 2005 Youth Environmental Award, sponsored by the Natural Resources Conservation Service and the U.S. Department of Agriculture (USDA) and administered by the National 4-H Council.

The 4-H<sub>2</sub>O Pontoon Classroom is a novel, community-supported, field-based program that teaches children about water quality, water as a resource and the environment. Partners include state parks, K-12 schools, universities, community associations, state agencies and power and water companies.

"4-H<sub>2</sub>O is a great project that can be implemented by other states," said Rick Willey, Clemson Extension 4-H natural resources specialist and program leader. "This program fosters a partnership for local communities to educate children about the importance of water conservation and water quality."

Willey credits the award to the work of local Extension agents and volunteers. Co-facilitators are Barbara Speziale, associate dean for summer programs and outreach, and Newberry County 4-H Extension agent Darren Atkins. The program has reached 1,100 students directly and 2,000 more through teacher training.

"4-H<sub>2</sub>O is remarkable in that the children use professional scientific equipment – the same equipment we use for field research," said Speziale. "This emphasizes to the children that they are doing real research and that they can become scientists."

For more information contact: Rick Willey, (864) 656-3090 or [www.clemson.edu/waterquality/4H2O/](http://www.clemson.edu/waterquality/4H2O/).

## Experiential learning programs serve all ages

By Pam Bryant

More than 26,000 young campers, professionals, adults with special needs, active seniors, academically talented students and at-risk youth participated in experiential learning activities through Clemson's Youth Learning Institute (YLI) last year.

Executive Director Jorge Calzadilla says, "YLI is committed to exploring new ways to diversify program offerings that embody the organization's core philosophy of creating high performance, experiential learning opportunities."

Some of the institute's recent initiatives include:

**C-CATS** – a college preparation program for top 9<sup>th</sup> and 10<sup>th</sup> graders from South Carolina, North Carolina and Georgia. Students participate in high-powered academic sessions and adventures like a 400-foot zip line at YLI's headquarters in Pickens. They take guided tours of the University and meet with admissions representatives to learn how to prepare for selective institutions like Clemson.

**New Horizons** – a partnership with the S.C. Department of Social Services that provides a group home for teenage mothers in foster care and their

babies at Clemson's R.M. Cooper Leadership Center in Summerton. The teen mothers continue their education and learn parenting and life skills in a safe and nurturing environment. New Horizons has a 100% success rate of young mothers completing the program to live independently and attend institutions of higher education.

**REACH** – a series of themed, weekend camps for adults with disabilities and special needs to enjoy camp-based activities that promote fun and learning in Pickens. During the summer, week-long REACH camping sessions are held in Pickens and Summerton.

**Youth Development Center** – a partnership with the S.C. Department of Juvenile Justice that provides a 45-bed alternative placement facility for non-violent juvenile offenders at Camp Long in Aiken.

**Elderhostel** – a national program for active seniors hosted by YLI. Last summer, seniors and their grandchildren enjoyed a week-long, intergenerational program of adventure and nature activities at Camp Bob Cooper in Summerton.

For more information: [www.clemson.edu/yli/](http://www.clemson.edu/yli/) or 864-878-1103.



## Noted animal scientist selected for Corley Chair

By Peter Kent



Nationally recognized animal scientist Susan Duckett has been selected as the Ernest L. Corley Jr. Trustees Chair for animal and veterinary sciences. Her research focuses on livestock nutrition and meat quality, especially the benefits of grass-fed cattle.

Duckett earned her undergraduate degree in animal science from Iowa State University, and her master's and Ph.D. from Oklahoma State University. She held posts at the University of Idaho and the University of Georgia before joining Clemson.

Her contributions to "Pasture-Based Beef Systems for Appalachia," a USDA cooperative research project, will help develop innovative, economically viable and environmentally sound practices to enhance the efficiency, profitability and sustainability of grassland-based beef production in this region.

Grass-fed beef has a higher nutritional value than its grain-fed counterpart, with 40% less fat and higher concentrations of omega-3, vitamin E, beta carotene and conjugated linoleic acid, a cancer-fighting compound. Grass-fed beef from Argentina sells for premium prices in U.S. restaurants and specialty markets.

"Appalachian beef could capture some of this market and increase the net income of farmers in this area," Duckett said.

Contact: Susan Duckett, 864-656-5151, [sducket@clemson.edu](mailto:sducket@clemson.edu).

## Cherokee Garden takes shape

By Diane Palmer

A new garden at the S.C. Botanical Garden reflects the Native American view of nature. Lecturer Karen Hall is coordinating its creation, based on her studies with the Eastern Band of the Cherokee. A grant from the Provost's Innovation Fund and volunteers from Clemson faculty, staff and students are bringing her vision to life.

"While interviewing Cherokee elders about how they use plants, I discovered that they have a significantly different view of the natural world than we do," said Hall. "Their worldview encompasses direction, water, significant numbers and balance. Medicine is physical, spiritual and mental. Being out of balance in any of these areas implies illness."

In the garden near the Campbell Geology Museum a circular structure represents the connectedness of medicine and balance while a stream of gravel represents water.

For more information: Karen Hall 864-656-0721, [carlson@clemson.edu](mailto:carlson@clemson.edu).



Photo by Diane Palmer

## Clemson Extension agents receive national honors

By Diane Palmer

Six Clemson Extension agents received awards and honors at the National Association of Extension 4-H Agents meeting in November:

**Debra Clowney-Parnell** (Florence County): Meritorious Service Award for outstanding achievement by individuals with 15 or more years of service. She was also honored with the 25 Years of Service Award.

**Latosia Gibson** (Colleton and Jasper Counties) and **Kellye Rembert** (Midlands regional director): Distinguished Service Award for outstanding achievement, professional attitude, and professional improvement by individuals with seven or more years of service.

**Lisa Cannon** (Marlboro County) and **Karissa Ulmer** (Allendale and Hampton Counties): Achievement in Service Award for creative and innovative programs by individuals with three to seven years of service.

**Michael McManus** (Marlboro and Chesterfield Counties) was elected to a two-year term as Southern Regional director for the association. Earlier, he earned national honors with the Distinguished Service Award and the Achievement in Service Award.

For more information: [www.clemson.edu/4H/](http://www.clemson.edu/4H/).

# New disease threatens pine stands

By Peter Kent

Forestry is a big business in South Carolina so state and Clemson forestry experts keep a close eye out for potential threats. The latest concern is *Leptographium*, a family of fungi that attacks pine trees. The fungi are transmitted by insects that invade trees weakened by stresses such as drought, heat, insects, soil quality or un-thinned timber stands.

"Once a landowner's forest gets the disease, there are few options left, one of which is to clear cut," said Beth Richardson, Clemson Extension area forester. "For many landowners, this has been more than a heart-wrenching decision."

Clemson Extension agents, federal and state foresters and university researchers teamed up in November to educate forest managers on how to identify the insects, fungi, tree root damage, and the resulting pine tree symptoms. They also provided information on how to prevent an infestation through forest management practices.

Trees are valuable economically and environmentally. Timber is the state's largest cash crop, with an annual delivered value of over \$876 million. In addition, an acre of trees can remove about 13 tons of dust and gases from the environment every year.

For more information: Beth Richardson, 803-534-6280, [mrchrds@clemson.edu](mailto:mrchrds@clemson.edu).



Photo by Tom Lollis

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